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ABSTRACT

In an investigation of the relationship between sharing and children's ability to estimate time under conditions either promoting sharing or not encouraging sharing, 67 children between 65 and 140 months of age first completed a time estimation task and then engaged in a sharing task with a same-age, same-sex peer. The children were given incentives either to share or not to share. As expected, the older children were more accurate in estimating time and also shared more. More sharing occurred when there were incentives to share. Further, controlling for time estimation ability decreased the relationship between age and sharing to nonsignificance in the condition that created an incentive for sharing, but did not decrease this relationship in the condition that did not create an incentive for sharing. It is concluded that specific cognitive abilities are prerequisite for specific prosocial behaviors, but whether or not children will use these abilities is dependent upon motivational conditions. (RH)

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Age Differences in Sharing as a Function of Children's Ability to Estimate Time and Motivational Instructions

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Abstract

Sixty-seven children between 65 and 140 months of age first completed a time estimation task and then engaged in a sharing task with a same-age, same-sex peer. The children were given incentives either to share or not to share. As expected, the older children were more accurate in estimating time and also shared more, and there was more sharing when there were incentives to share. Further, controlling for time estimation ability decreased the relationship between age and sharing to nonsignificance in the condition that created an incentive for sharing, but did not decrease this relationship in the condition that did not create an incentive for sharing. The findings suggest that specific cognitive abilities are prerequisite for specific prosocial behaviors, but whether or not children will use these abilities is dependent upon motivational conditions.

Purpose

To investigate the relationship between sharing and children's ability to estimate time under conditions that create an incentive for sharing or do not create an incentive for sharing.

Expectations

1. Sharing of a desirable object within a limited time period would increase with age.
2. The increase in sharing with age would be at least partially accounted for by developmental improvements in ability to estimate time.
3. Ability to estimate time would be more highly related to sharing in the condition that created an incentive for sharing than in the condition that did not create an incentive for sharing.

Method

Subjects

Sixty-seven children between 65 and 140 months of age.

Time Estimation Task

Children estimated when 2 minutes had elapsed while engaged in a task of low attentional demand (e.g., copying geometric shapes).

Sharing Task

Pairs of same-age, same-sex, children colored pictures for 4 minutes in order to receive rewards. Each child was given a picture. Only one child was given a crayon, and was allowed to share the crayon as much or as little as he/she wished. This task was conducted under one of the following motivational conditions:

1. Cooperative (creates incentive for sharing).
   Children were told that the number of prizes each would receive depended on how closely to the same amount the two pictures were colored.
2. Individualistic (does not create incentive for sharing).
   Children were told that the number of rewards each would receive depended on how well and how much of his/her picture was colored.

Analyses

Hierarchical multiple regression analyses were conducted to predict time estimation ability from age, gender, and the age-by-gender interaction, and to predict sharing from age, gender, motivational condition, and all possible interactions.

Results

Time Estimation

Age accounted for 18% of the variance in ability to estimate time (r = -.43, $F(1,64)$ = 14.49, p < .01.

Sharing

1. Age accounted for 17% of the variance in sharing (r = -.41, $F(1,64)$ = 5.05, p < .001.
2. When the ability to estimate time was controlled, the proportion of variance accounted for by age was reduced to 8% (r = -.27, $F(1,63)$ = 7.01, p = .01.
3. Controlling for the ability to estimate time decreased the amount of variance accounted for by age differentially across motivational conditions. In the individualistic condition, age alone accounted for 28% (r = -.53, $F(1,31)$ = 12.15, p < .01) of the variance in sharing, and continued to account for 28% (r = -.53, $F(1,31)$ = 11.75, p < .01) of the variance when time estimation was controlled. In the cooperative condition, age alone accounted for 11% (r = -.34, $F(1,32)$ = 4.09, p = .05) of the variance in sharing, but accounted for less than 1% of the variance (r = -.03, $F(1,31)$ = .05, n.s.) when time estimation was controlled.
4. Motivational condition accounted for 11% of the variance in sharing (r = -.33, $F(1,63)$ = 10.40, p < .01, with more sharing in the cooperative condition than in the individualistic condition.

Conclusions

1. Sharing of a desirable object within a limited time period depends partially upon the ability to estimate time.
2. Sharing of a desirable object within a limited time period may also depend partially upon age-related variables other than the ability to estimate time.
3. Sharing of a desirable object within a limited time period depends partially upon the motivational features of the situation.
4. Whether or not the ability to estimate time is utilized to engage in sharing behavior depends partially upon the motivational conditions of the situation.

Table 1

Means and Standard Deviations for Time Estimation by Age Group

	Time estimation[a]		
Age group (in months)	n	Mean	SD
65-77	21	86	55
78-95	24	72	52
96-140	22	34	17

Note. 1. Lower scores correspond to better ability to estimate time.

2. Age was a continuous variable in the data analyses. The cut-off points used for age in this table were simply to divide the sample approximately into thirds.

[a]Number of seconds error in estimating 2 minutes.

Table 2

Means and Standard Deviations for Sharing by Age Group and Motivational Condition

	Sharing[a]					
	Cooperative motivation			Individualistic motivation		
Age group (in months)	n	Mean	SD	n	Mean	SD
65-77	11	133	105	10	204	65
78-95	10	89	89	14	160	94
96-140	13	64	29	9	87	89

Note. 1. Lower scores correspond to more sharing.

2. Age was a continuous variable in the data analyses. The cut-off points used for age in this table were simply to divide the sample approximately into thirds.

[a]Absolute difference, in seconds, between amount of time child kept crayon and shared crayon.